



Job Loss Analysis

ID No: 2000016 Status: Closed

Original Date: 11/Nov/2009
Last Review Date:

Organization:

SBU: Global Manufacturing
BU: Global Mfg Shared
Work Type: Technical Process Engineering
Title (Work Activity): Process Engineering Plant Mass Balance
Site/Region:

Personal Protective Equipment (PPE)	Selected	Comments
Additional Task Specific PPE		
Other		

Reviewers

Reviewers Name	Position	Date Approved
Michelle Johansen	Process Engineering Manager RI Refinery	11/11/09

Development Team

Development Team Member Name	Primary Contact	Position
Damilola Dawodu	Y	Process Engineer
Christopher Watson		Process Engineer
Aaron Sims		Process Engineer
Charles Odumah		

Job Steps

No	Job Steps	Potential Hazard	Critical Actions
1	Develop scope of mass balance	1. Time is not utilized efficiently to plan/prepare for mass balance. 2. Opportunities/goal is not met.	1a. Review Process Flow Diagram of unit 1b. Review previous mass balances performed on plant 1c. Identify process equipment and streams to be included in mass balance 1d. Obtain input from Subject Matter Expert (SME), Ops and other key personnel 2. Develop desired accuracy of mass balance / acceptable percent error.

2	Prepare to collect data	<p>1. Key data is not collected, inaccurate, or does not represent normal operation.</p> <p>2. Plant moves are made which delay/upset data collection</p> <p>3. Personnel required to sample or assist with plant moves are not available.</p>	<p>1a. Identify automated (PI) tags, field tags and sample points required for balance</p> <p>1b. Develop spreadsheet with all the required inputs</p> <p>1c. Ensure meters have been calibrated and sample points are operational</p> <p>2a. Identify a window of stable/normal plant operation</p> <p>2b. Notify Ops of your intention to perform mass balance</p> <p>3. Ensure operators/sampling technicians are available to take samples and make plant moves.</p>
3	Gather Data	<p>1. Key data is not collected</p> <p>2. Samples are misplaced or not properly analyzed</p> <p>3. Timing of samples/data is not documented.</p>	<p>1. Ensure that all required data and samples have been collected</p> <p>2. Ensure lab samples are analyzed in a timely manner</p> <p>3. Document data, lab samples and time of collection</p>
4	Analyze Data	<p>1. Data collected is invalid / incorrect</p>	<p>1a. Compare data and sample results to previous data and sample results</p> <p>1b. Compare results to previous material balances</p> <p>1c. Use simulation tools to evaluate accuracy of data and sample results</p> <p>1d. Investigate discrepancies</p>
5	Perform mass balance calculations	<p>1. Calculation errors occur leading to invalid mass balance</p>	<p>1a. Perform mass balance calculations around individual pieces of equipment</p> <p>1b. Perform mass balance calculations for the entire unit</p> <p>1c. Compare calculation results to design manual and simulations</p> <p>1d. Compare calculated percent error to desired percent error.</p> <p>1e. Verify results with SME</p> <p>1f. Investigate discrepancies</p>
6	Document results	<p>1. Mass balance is difficult to understand</p> <p>2. Information is lost</p>	<p>1a. Document all data collected, time of collection and other key variables</p> <p>1b. Consolidate mass balance in an easy to understand format</p> <p>2a. Store results in PMO files and GDW</p> <p>2b. Communicate results to stakeholders</p>